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Philippe Hocquet

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EXAMINER

FULLER, ROBERT EDWARD

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,236	Applicant(s) HOCQUET ET AL.	
	Examiner ROBERT E. FULLER	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-11,14-17,19 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,9-11,14-17,19 and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's submission, filed June 29, 2010, has been carefully considered. However, examiner maintains the previous grounds of rejection, and has also added new grounds of rejection against the amended claims. Examiner has also added new claim objections.

Claim Objections

2. Claim 23 is objected to because of the following informalities: The word --of-- should be inserted between "consisting" and "one" in line 3. Appropriate correction is required.
3. Claims 24 and 25 are objected to because of the following informalities: The word "extent" should be changed to --extend-- in each of these claims. Appropriate correction is required.
4. Claim 26 is objected to because of the following informalities: It is unclear whether the fluid medium recited in this claim is the same fluid medium recited in claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, 9-11, 14-17, 19, and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ioanesian et al. (US 3,728,040).

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With regard to claim 1, Ioanesian discloses a drilling apparatus comprising: a turbine (1) being provided with a turbine shaft (7), a hydraulic braking device (15—see also Fig. 7) configured to operate with the turbine wherein the hydraulic braking device consists of one or more bodies (11, 13) connected to said turbine shaft, and wherein when said hydraulic braking device is immersed in a fluid medium, rotation of the turbine shaft about its axis causes a movement of the said at least one body with respect to the said fluid medium, this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the said fluid medium providing a quadratic relation; and wherein the construction of the braking device is such that a braking effect is obtained when the rotation speed of the turbine exceeds a predetermined threshold value and the braking effect is not obtained when under the predetermined threshold value as a result of the quadratic relation (column 3, lines 32-41; column 4, lines 53-66).

With regard to claims 2-5, Ioanesian discloses a braking shaft (the lower half of shaft 7) coupled to the said turbine shaft (the upper half of shaft 7), wherein the body is connected to the braking shaft. The shafts are coaxial, rotate together, and are combined into a single shaft.

With regard to claim 9, the body rotates when the turbine shaft rotates.

With regard to claims 10 and 11, the body is connected to the shaft via a connecting means comprising an anchor zone.

With regard to claims 14-17, the bodies are spaced in a regular manner, have the same axial positions, are identical, and have the same dimensions.

With regard to claim 19, the braking device (15) is downstream of the turbine (1).

With regard to claim 23, Ioanesian discloses a turbine (1) comprising: a turbine shaft (7) and; a hydraulic braking device (15—see Also Fig. 7) consisting of one or more bodies connected to said turbine shaft (4); wherein when said hydraulic braking device is immersed in a fluid medium, rotation of the turbine shaft about its axis causes a movement of the said at least one body with respect to the said fluid medium, this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the said fluid medium. providing a quadratic relation; and wherein the construction of the braking device is such that a braking effect is obtained when the rotation speed of the turbine exceeds a predetermined threshold value and the braking effect is not obtained when under the predetermined threshold value as a result of the quadratic relation (column 3, lines 32-41; column 4, lines 53-66).

With regard to claims 24 and 25, the bodies extend along a length of the shaft, and in a direction normal to the shaft.

With regard to claims 26 and 27, flow drives the turbine, and that flow is parallel to a length of the bodies.

7. Claims 1-4, 9-11, 14-17, and 23-26 are rejected under 35 U.S.C. 102(B) as being anticipated by Ranzi (US 2,512,438).

With regard to claim 1, Ranzi discloses an apparatus comprising: a turbine (i.e. an “airplane compressor”, column 1, line 44) being provided with a turbine shaft (A), a

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hydraulic braking device (D, D') configured to operate with the turbine wherein the hydraulic braking device consists of one or more bodies (D') connected to the turbine shaft (indirectly through housing D), and wherein when the hydraulic braking device is immersed in a fluid medium (H), rotation of the turbine shaft about its axis causes a movement of the one or more bodies with respect to the fluid medium (column 2, lines 34-42), this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the fluid medium providing a quadratic relation; and wherein the construction of the braking device is such that a braking effect is obtained when the rotation speed of the turbine exceeds a predetermined threshold value and the braking effect is not obtained when under the predetermined threshold value as a result of the quadratic relation.

With respect to the limitation "a drilling apparatus", examiner submits that there is no structure in claim 1 relating to drilling. Therefore, Ranzi's apparatus can be considered a "drilling apparatus", since it has all of the structure in claim 1. Furthermore, since Ranzi discloses all of the claimed structure, then Ranzi's turbine will inherently provide the same quadratic relation and the same braking threshold recited in the claim.

With regard to claim 2, as best understood by the examiner, Ranzi discloses a braking shaft (E) coupled to the turbine shaft (A--the coupling is via graphite layer 'L', as well as the housing D being disposed around shaft A proximate numeral '2' in Fig. 1), and the bodies are, in turn, also indirectly connected to the braking shaft.

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With regard to claim 3, rotation of the turbine shaft (A) will affect rotation of the braking shaft (E--through graphite layer 'L').

With regard to claim 4, the two shafts are coaxial.

With regard to claim 9, the bodies rotate with the braking shaft (E), and, in turn, with the turbine shaft (A) via graphite layer L.

With regard to claims 10 and 11, the bodies are rigidly connected to the braking shaft (E) by connecting means (i.e. bolts, housing D, etc.), and the connecting means is an anchor zone of the body (see Fig.1).

With regard to claims 14-17, the bodies are distributed around the periphery of the shaft in a regular manner, have the same axial positions, and are identical, i.e. having the same dimensions (see Fig. 1).

With regard to claim 23, Ranzi discloses a turbine (i.e. an "airplane compressor") comprising: a turbine shaft (A) and; a hydraulic braking device (D, D') consisting of one or more at least one bodies (D') connected to the turbine shaft (indirectly through the housing D); wherein when the hydraulic braking device is immersed in a fluid medium (H), rotation of the turbine shaft about its axis causes a movement of the one or more bodies (via plate B and graphite L) with respect to the fluid medium, this movement generating a resisting torque that is a function of the square of the rotation speed of the turbine shaft with respect to the fluid medium providing a quadratic relation; and wherein the construction of the braking device is such that a braking effect is obtained when the rotation speed of the turbine exceeds a predetermined threshold value and

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the braking effect is not obtained when under the predetermined threshold value as a result of the quadratic relation.

As noted above, since Ranzi discloses all of the structure in claim 23, then Ranzi's turbine will inherently provide the same quadratic relation and the same braking threshold recited in the claim.

With regard to claims 24 and 25, the bodies extend along a length of the shaft in a direction normal to the shaft (see Fig. 1).

With regard to claim 26, an airplane compressor is driven by fluid flow (examiner assumes that the "fluid medium" in this claim is different from the "fluid medium" in claim 1.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ranzi.

Ranzi fails to disclose the turbine shaft and the braking shaft being formed from a single shaft. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the braking shaft and turbine shaft of Ranzi into a single shaft, as this would not have affected the operation of the braking mechanism, but would only have eliminated the delay in speed change due to the presence of the graphite, and furthermore, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Response to Arguments

10. Applicant's arguments filed June 29, 2010 have been fully considered but they are not persuasive. Applicant has argued that loanesian fails to disclose the braking device *consisting of* bodies connected to the turbine shaft since loanesian's braking device also has vanes which are attached to the housing. Examiner respectfully traverses this argument. While loanesian does also disclose vanes attached to the housing, these vanes are also *fluidicly* connected to the turbine shaft. Since the claim does not require the bodies to be *rotatably* connected to the shaft, then loanesian's bodies can still be considered to meet the "consisting of" language of the amended claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references provide further examples of turbines having a braking arrangement.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT E. FULLER whose telephone number is (571)272-6300. The examiner can normally be reached on Monday thru Friday from 8:00 AM - 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shane Bomar can be reached on 571-272-7026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/
Supervisory Patent Examiner, Art
Unit 3676

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/R.E.F./